# TECHNICAL REVIEW DOCUMENT for OPERATING PERMIT 950PEP147

to be issued to:

US Air Force
Peterson Air Force Base
El Paso County
Source ID 0410016

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#### I. PURPOSE:

This document will establish the basis for decisions made regarding the applicable requirements, emissions factors, monitoring plan and compliance status of emission units covered by the operating permit proposed for this site. It is designed for reference during the review of the proposed permit by the EPA, the public, and other interested parties. The conclusions made in this report are based on information provided in the original application submittal of February 23, 1996, previous inspection reports, as well as numerous telephone conversations with the applicant.

#### II. SOURCE DESCRIPTION:

This facility is located in Colorado Springs, Colorado. Colorado Springs is classified as nonattainment for carbon monoxide. There are no Federal Class I designated areas within 100 kilometers of the plant, and no affected states within 50 miles. Florissant Fossil Beds is a Federal land area within 100 kilometers of the facility. Florissant Fossil Beds has been designated by the State to have the same sulfur dioxide increment as Federal Class I areas.

For the preparation of the Title V application the annual estimated emissions for all the sources were complied in an emissions inventory. The sources evaluated included approximately 254 boilers, furnaces and hot water heaters; 29 emergency standby generators; 57 storage tanks; three refueling operations; a vehicle maintenance facility; 74 operational shops; an aircraft parts paint booth; an engine testing facility; aircraft deicing operations and routine aircraft maintenance activities. Since the submittal of the Title V application there have been two significant changes in the air emissions sources. Two classified document incinerators have been demolished and ethylene glycol is no longer used for aircraft deicing. The sum total of the potential to emit from all the remaining sources is shown later in a table. The evaluation found Peterson AFB to be categorized as a major source subject to the Title V operating permit program provisions based on the nitrogen oxides, volatile organic compounds and total hazardous air pollutant emissions.

After the determination was made that Peterson AFB was subject to the Title V program provisions, each emissions source was evaluated to determine if it could be categorized as

an insignificant activity based on the level of emissions or its category. The majority of the activities/sources at the Base (individually) have minor emissions, and, therefore, were insignificant. After the insignificant sources were identified on the inventory list, only a few sources remained that needed to be addressed in the Title V permit.

A number of the small sources had previously obtained construction permits. During the Title V application evaluations it was found that most of these small permitted sources were either categorically exempt or exempt on the basis of the small amount of estimated actual annual emissions. On this basis, some 20 existing construction permits were canceled.

The sources were grouped as noted above. The inclusion of the vehicle maintenance shop was somewhat unique. The shop routinely services a large number of vehicles. Vehicles are mobile sources and not subject to the Title V provisions. However, during the service testing of the engines, the engine exhaust is discharge to a duct which becomes a stationary source of emissions. For each group, a conservative approach was used to prepare the emission estimates. If reference manuals provided a range of emission factors for the various sources in a group, the highest factor was selected to provide the worst case estimation of the emissions for the entire group. While this approach may overestimate the emissions, it greatly simplifies the emission estimation process.

The Potential-To-Emit (PTE) for some of the grandfathered sources could have placed the Base in the category of a major source for the provisions of Prevention of Significant Deterioration/New Source Review (PSD/NSR). Documents were submitted to establish Federally enforceable limits for these sources. The Federally enforceable permit limits established the Base PTE below the PSD/NSR major source category threshold but have provision for increases in the activities without the need to modify the permit limits. The difference between the PTE and the estimated actual annual emissions is shown in the following tabulation of emissions.

<b>POTENTIAL</b>	. TO	EMIT	TONS	PER	VEAR

Emission Source Group	$PM_{10}$	СО	NOX	SO <sub>2</sub>	voc	HAPS
Boilers, Furnaces, HW heaters	9.39	20.86	88.06	6.82	4.22	1.14
Generators	2.49	11.24	51.65	2.33	3.07	0.39
Engine Testing	0.03	1.02	0.21	0.22	0.66	0.21
Storage Tanks					8.19	0.22
Refueling					58.91	5.51
Vehicle Maintenance	0.00	1.92	0.03	0.00	0.24	0.02
Operational Shops					90.67	16.09
TOTALS	11.91	35.04	139.95	9.37	165.96	23.58

### 1995 INVENTORY ESTIMATED ACTUAL ANNUAL EMISSIONS

Emission Source Group	PM <sub>10</sub>	СО	NO <sub>x</sub>	SO <sub>2</sub>	voc	HAPS
Boilers, Furnaces, HW heaters	1.35	4.49	11.24	0.07	0.82	0.13
Generators	0.24	1.12	5.16	0.22	0.29	0.04
Incinerators	0.16	0.22	0.06	0.06	0.06	0.00
Engine Testing	0.01	0.34	0.07	0.07	0.22	0.07
Storage Tanks					6.88	0.23
Refueling					29.53	2.72*
Vehicle Maintenance	0.00	0.64	0.01	0.0	0.08	0.08
Operational Shops					30.48	9.00
TOTALS	1.76	6.81	16.54	0.42	68.36	12.27

<sup>\*</sup> The value initially reported was 10.52 TPY, but a corrected value was provided in later correspondence

The above table reveals that even as a group, most of the sources do not exceed the current Regulation No 3 permit requirement thresholds based on estimated actual uncontrolled annual emissions. The low actual annual emissions were considered in establishing the reporting intervals. In reviewing the inventory, it was noted that the all the emergency standby generators were shown operating at less than 250 hours per year. The highest usage

was approximately 150 hours for a 10 KW generator. Generators larger than 300 KW reported operating hours approximately equivalent to one hour per week for a routine exercise cycle.

The Title V application reports this facility is not subject to the requirements of Section 112(r)(7), the Accidental Release Program of the Clean Air Act. Peterson AFB currently has a program underway to convert from the use of JP-8 to propane for fire training activities. The quantity of propane to be stored will require the preparation of an appropriate plan. The development of the plan is currently programmed for Fiscal Year 1998.

File information and the Title V application indicates none of the boilers are subject to the Title IV, Acid Rain Program.

The compliance status of each source is based on the information provided in the application and a review of the office files available. No non-compliance issues were discovered in the file review. The Division accepts the facility was in compliance at the time the Title V application was submitted. Since no compliance plan or schedule was included for start-up, shut-down or malfunction opacity exceedances, it is accepted that the facility has adequate and appropriate control programs in place.

#### III. EMISSION SOURCES

The following sources are specifically regulated under terms and conditions of the Operating Permit for this site:

### **S015 - Engine Testing**

- 1. Applicable Requirements A permit application and APEN were submitted for the engine testing. The permit application allowed the Potential-to-Emit (PTE) for the engine testing to be established by Federally enforceable limits. The compliance limits were determined from the APEN submitted and the regulations. For efficiency and streamlining, the compliance limits were established directly in this operating permit to avoid duplicate public comment periods. The hourly compliance standard for NOx was adjusted to allow longer operation in the military mode if needed in a given test.
- **2. Emission Factors -** The aircraft jet engines are tested at a single outdoor test cell. The engines are tested in an idle and a military mode. The idle test mode accounts for approximately 90% of the total test time. Peterson AFB previously tested two engine types: T56-7 and T56-15. Now only the T56-15 is tested. The emission factors used are for the T56-15

- **3. Monitoring Plan -** The emissions are based on the hours of engine operation. Test personnel will record the time of operation for each engine in each test mode. The engines are generally tested for short periods of time (minutes) in each mode. The short test duration makes it difficult at best to attempt to perform a Method 9 observation. In addition, the particulate emissions are low, making opacity problems a limited possibility. If, however, the engine testing time became extended, the possibility for opacity problems becomes a consideration. The monitoring plan approaches this problem by requiring extended operating times to be reported.
- **4. Compliance Status -** The Division accepts this source was in compliance at the time the Title V application was submitted.

### **Bldg 214 - Flight line Maintenance**

- 1. Applicable Requirements A permit application and APEN were submitted for the flight line maintenance. The permit application allowed the Potential-to-Emit (PTE) to be established by Federally enforceable limits. The compliance limits were determined from the APEN submitted and the regulations. For efficiency and streamlining, the compliance limits were established directly in this operating permit to avoid duplicate public comment periods. The permit limits were adjusted after notification was received that ethylene glycol was no longer used for deicing.
- **2. Emission Factors -** The maintenance activities involve the use of various amounts of lubricating oils and compounds, hydraulic fluids, hand cleaners and deicing fluids. Emissions are estimated by the mass balance approach by calculation of the amount of materials used, and the emissions associated with their use. The mass balance is dependent on an accurate accounting of the kinds or types of materials used, the amounts used on a periodic basis, and the Material Safety Data Sheets (MSDS) or manufacturer's information on the material composition. Good work practices are an integral part of controlling the emissions.
- **3. Monitoring Plan -** The monitoring plan calls for the materials used and the associated emissions to be calculated for each month. The monthly totals will provide the input for the annual emissions estimate. An allowance for a reduction in the estimated emissions for proper waste disposal of the spent materials was provided in the monitoring plan.
- **4. Compliance Status -** The Division accepts this source was in compliance at the time the Title V application was submitted.

# **Bldg 625 - Structural Repair Shop**

- 1. Applicable Requirements A permit application and APEN were submitted for the structural repair shop. The permit application allowed the Potential-to-Emit (PTE) to be established by Federally enforceable limits. The compliance limits were determined from the APEN submitted and the regulations. For efficiency and streamlining, the compliance limits were established directly in this operating permit to avoid duplicate public comment periods.
- **2. Emission Factors -** The repair shop activities involve the use of various amounts of lacquers, paints, primers, thinners, cleanup solvents, naphtha, rubber compounds and other similar materials. Emissions are estimated by the mass balance approach by calculation of the amount of materials used, and the emissions associated with their use. The mass balance is dependent on an accurate accounting of the kinds or types of materials used, the amounts used on a periodic basis, and the Material Safety Data Sheets (MSDS) or manufacturer's information on the material composition. Good work practices are an integral part of controlling the emissions.
- **3. Monitoring Plan -** The monitoring plan calls for the materials used and the associated emissions to be calculated for each month. The monthly interval was proposed in the Title V application to provide a close check on the inventory status, to allow for a prompt correction if reporting is incomplete, and to establish a routine reporting procedure. The monthly totals will provide the input for the annual emissions estimate. An allowance for a reduction in the estimated emissions for proper waste disposal of the spent materials was provided in the monitoring plan.
- **4. Compliance Status -** The Division accepts this source was in compliance at the time the Title V application was submitted. The shop may become subject to the 40 CFR 63, Subpart GG Aerospace MACT standard during the term of this operating permit. The Title V application states the applicant has submitted a notice of compliance to EPA in accordance with 40 CFR 63.753.

# Bldg 214 - Isodock Shop

- **1. Applicable Requirements -** A permit application and APEN were submitted for the Isodock Shop. The permit application allowed the Potential-to-Emit (PTE) to be established by Federally enforceable limits. The compliance limits were determined from the APEN submitted and the regulations. For efficiency and streamlining, the compliance limits were established directly in this operating permit to avoid duplicate public comment periods.
- **2. Emission Factors -** The Isodock Shop activities involve minor, non-structural repair work, and aircraft washing. The activities include the use of various amounts of adhesive sealants, greases, anti-seize compounds, degreasers, absorbent materials, hydraulic fluids, lubricating oils, leak detection compounds and other similar materials. Emissions are estimated by the mass balance approach by calculation of the amount of materials used, and the emissions associated with their use. The mass balance is dependent on an accurate accounting of the kinds or types of materials used, the amounts used on a periodic basis, and the Material Safety Data Sheets (MSDS) or manufacturer's information on the material composition. Good work practices are an integral part of controlling the emissions.
- **3. Monitoring Plan -** The monitoring plan calls for the materials used and the associated emissions to be calculated for each month. The monthly interval was proposed in the Title V application to provide a close check on the inventory status, to allow for a prompt correction if reporting is incomplete, and to establish a routine reporting procedure. The monthly totals will provide the input for the annual emissions estimate. An allowance for a reduction in the estimated emissions for proper waste disposal of the spent materials was provided in the monitoring plan.
- **4. Compliance Status -** The Division accepts this source was in compliance at the time the Title V application was submitted.

## **Bldg 625 - Aircraft Parts Coating Paint Booth**

- **1. Applicable Requirements -** The applicable requirements were established by Construction Permit 92EP377. Fugitive emissions from materials are to be controlled by good work practices.
- **2. Emission Factors -** Emissions are estimated by the mass balance approach by calculation of the amount of materials used, and the emissions associated with their use. The mass balance is dependent on an accurate accounting of the kinds or types of materials used, the amounts used on a periodic basis, and the Material Safety Data Sheets (MSDS) or

manufacturer's information on the material composition. Good work practices are an integral part of controlling the emissions.

- **3. Monitoring Plan -** The monitoring plan calls for the materials used and the associated emissions to be calculated for each month. The monthly totals will provide the input for the annual emissions estimate.
- **4. Compliance Status -** The Division accepts this source was in compliance at the time the Title V application was submitted.

### Gasoline Service Stations - Bldgs 1360 and 1700

The following table was provided in the Title V application.

	Actuals		Potential to Emit	
Source	VOCs (tpy)	HAPs (tpy)	VOCs (tpy)	HAPs (tpy)
Refueling at Service Stations	18.8	1.5	56.4	4.5
AVGAS Loading into Tanker Trucks	0.14	0.07	0.70	0.35
AVGAS Refueling Aircraft	0.27	0.13	1.35	0.65
Jet Fuel Loading into Tanker Trucks	10.32*	1.02*	0.71**	0.01**
TOTALs	29.53	2.72	59.16	5.51

At first glance there appears to be an error in the values for the actual emissions and the PTE for the jet fuel loading into tanker trucks. The potential to emit values shown are less than the actual emissions. At the time the application was prepared, Peterson AFB had just converted from the use of JP-4 to JP-8 jet fuel. The actual emissions shown represent the use of the JP-4 during a portion of the reporting year. Since JP-8 was the only jet fuel at the time the application was prepared, the PTE was based on the use of JP-8 only. The significant reduction in emissions from JP-8 results in the apparent contradiction of the potential emissions being greater than the actual emissions.

The second reason for the table is to demonstrate that there are significant emissions from the gasoline service stations which need to be reported. Service stations are identified as Building 1360, 1700 and 1232. The contribution from Building 1232 is reported as less than 0.60 tons per year.

- 1. Applicable Requirements Regulation No. 3 exempts gasoline stations in VOC attainment areas from the need for a construction permit; however, emissions greater than 2.0 tons per year are to be reported on APENs. A permit application and APEN were submitted for the gasoline service stations. The permit application allowed the Potential-to-Emit (PTE) to be established by Federally enforceable limits. The compliance limits were determined from the APEN submitted and the regulations. For efficiency and streamlining, the compliance limits were established directly in this operating permit to avoid duplicate public comment periods.
- **2. Emission Factors -** The emission factor is formed by the combination of the emission factor for uncontrolled displacement losses from the storage tank and the factor for spillage. The Title V submittal was found to contain an error in the determination of the non-criteria reportable emissions estimates. This error was noted and corrected during a pre-draft review of the Title V documents. Most of the fuel storage tanks are equipped with Stage I vapor recovery systems. The emissions were based on no vapor control on any of the tanks as a conservative estimate of the PTE. The estimated actual annual emissions may be adjusted to reflect the reduced emissions from the tanks equipped and operated with the vapor recovery systems.
- **3. Monitoring Plan -** The monitoring plan calls for monitoring the monthly gasoline station throughput and the number of days of operation. This records allow a determination of the compliance with the short term and annual limits.
- **4. Compliance Status -** The Division accepts this source was in compliance at the time the Title V application was submitted.

### **Hazardous Air Pollutants**

- **1. Applicable Requirements -** The applicable requirement is for the reporting of the emissions above the appropriate bin thresholds
- 2. Emission Factors Hazardous air pollutant emissions for each source are estimated by using the mass balance approach of calculating the amount of materials used, and the emissions associated with their use for each emission unit. The mass balance is dependent on an accurate accounting of the kinds or types of materials used, the amounts used on a periodic basis, and the Material Safety Data Sheets (MSDS) or manufacturer's information on the material composition. Good work practices are an integral part of controlling the emissions.

- **3. Monitoring Plan -** The monitoring plan calls for the materials used and the associated emissions to be calculated for each month. The monthly totals will provide the input for the annual emissions estimate.
- **4. Compliance Status -** The Division accepts this source was in compliance at the time the Title V application was submitted.

### **Permit Shield**

The intent of the permit shield is to provide limited protection to the facility in the event of an error in the evaluation of whether a regulation, or portion of a regulation applies. The facility identifies the issue and presents its position. The Division reviews the position. If the Division and the facility mutually agree on the position, the issue is recorded in the permit. If, at a later date, it is determined that an error was made in the mutual decision, the facility is protected from enforcement action until the permit can be reopened and the correct requirements and a compliance schedule inserted.

In this application, an extensive list of non-applicable sections of the Federal and State regulations are identified for the sources, and the request for the shield justified.

### Miscellaneous

From time to time published emission factors are changed based on new or improved data. A logical concern is what happens if the use of the new emission factor in a calculation results in a source being out of compliance with a permit limit. For this operating permit, the emission factors or emission factor equations included in the permit are considered to be fixed until changed by the permit. Obviously, factors dependent on the fuel sulfur content or heat content can not be fixed and will vary with the test results. The formula for determining the emission factors is, however, fixed. It is the responsibility of the permittee to be aware of changes in the factors, and to notify the Division in writing of impacts on the permit requirements when there is a change in factors. Upon notification, the Division will work with the permittee to address the situation.